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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,984

04/28/2005

Tomoyuki Yoshida

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EXAMINER

STERRETT, JONATHAN G

ART UNIT

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3623

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/532,984	<b>Applicant(s)</b> YOSHIDA ET AL.	
	<b>Examiner</b> JONATHAN G. STERRETT	<b>Art Unit</b> 3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4-28-05</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Summary*

1. This **Non-Final Rejection** is responsive to 28 April 2005. Currently **Claims 1-14** are pending in the application. The examiner notes that this application has the same filing date as a related application, 10/532983.

### *Double Patenting*

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**Claims 1-14** provisionally rejected on the ground of nonstatutory double patenting over **claims 1-16** of copending Application No. **10/532983**. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

**Claims 1, 13 and 14** essentially claim the same subject matter as claims 1, 15 and 16 of the '983 application, except for in the '983 application additional steps of calculating a margin and safety stock are recited. Also the step claiming the calculating a forecast quantity of orders in the '983 application recites this step with the additional limitation of "for each scheduled delivery date or scheduled delivery period" Thus the independent claims in the instant application are broader than those recited in the '983 application.

Additionally **Claims 2-12** in the instant application correspond exactly to claims 2-12 in the '983 application.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**Claim 13** is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

**Claim 13** is rejected under 35 U.S.C. 101 based on Supreme Court precedent, and recent Federal Circuit decisions, the Office's guidance to examiners is that a § 101 process must (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

An example of a method claim that would not qualify as a statutory process would be a claim that recited purely mental steps. Thus, to qualify as a § 101 statutory process, the claim should positively recite the other statutory class (the thing or product) to which it is tied, for example by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state.

Here, applicant's method steps, fail the first prong of the new Federal Circuit decision since they are not tied to another statutory class and can be performed without the use of a particular apparatus. Thus, **Claim 13** is non-statutory since it may be performed within the human mind.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding Claims 1, 13 and 14, the claims recite "judging". The meaning of this term is unclear and does not positively recite the limitations following. The examiner suggests the term "determining".

Furthermore regarding these claims, the limitation "the new sets of forecast information" – it is unclear which sets of forecast information this refers to.

Additionally regarding Claims 3 and 4 the limitation is recite "**whose forecast lead times are consecutive to two or more corresponding actual order quantities.**" It is not clear how lead times, which are represented by days or periods of time, are consecutive to order quantities, which are represented by numbers of items. The claims are indefinite.

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**Claims 2 and 5-14** are also indefinite because they inherit the deficiencies of their respective parent claims.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over “Production Planning of Style Goods with High Setup Costs and Forecast Revisions”, Gabriel R. Bitran, Elizabeth A. Haas and Hirofumi Matsuo, Operations Research, Vol. 34, No. 2 (Mar. - Apr., 1986), pp. 226-236 (hereinafter **Bitran**)

Regarding **Claim 1**, Bitran teaches:

**[1] An order forecast system for deciding safe stock quantities based on forecast information indicating required quantities for a plurality of scheduled delivery dates or scheduled delivery periods, which system comprises:**

**a forecast storage section for storing a plurality of sets of past forecast information having different receive dates;**

page 226 column 2, past information regarding forecasts for electronic items is stored – this is the basis for knowing the forecast accuracy for different items (i.e. as per the coefficient of variation).

**an actual order quantity storage section for storing actual order quantities for each delivery date or delivery period;**

page 226 column 2, since they are able to calculate the coefficient of variation, this means that both actual and forecast order quantities have been recorded (i.e. stored).

**and a processing unit for using the past forecast information stored in the forecast storage section and the actual order quantities stored in the actual order quantity storage section to calculate the safe stock quantities by correcting required quantities in new sets of forecast information for which forecasts are to be made,**

page 227 column 1 para 3, the problem Bitran is trying to solve is ensuring adequate inventory (i.e. adequate safety stock)

**wherein the processing unit calculates a plurality of conversion coefficients that are ratios of one or more required quantities contained in the sets of past forecast information to one or more corresponding actual order quantities;**

page 226 column 2, the coefficients of variation are ratios of the forecast (i.e. required) to the actual orders quantities for different types of products. Forecast

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accuracy is also a conversion coefficient (i.e a ratio of what was actually sold to what was predicted to be sold).

**calculates a standard deviation of the conversion coefficients whose forecast lead times, defined as a period between forecast receive date and scheduled delivery date, are the same;**

**judges a forecast lead time whose standard deviation or a value derived therefrom does not exceed a predetermined threshold to be a valid forecast lead time;**

page 226 column 2, Bitran teaches that forecast accuracy (i.e. a conversion coefficient) varies over time and by product. On page 227 column 1, last para Bitran teaches that an assumption (i.e. a judgment) is made that forecast error is assumed be constant and decreasing over time (from the earlier discussion, this means that the std deviation of the forecast error for different products (i.e. and their associated lead times) is determined to be decreasing over time, that is, does not exceed a predetermined threshold.

**calculates a forecast quantity of orders for each scheduled delivery date or scheduled delivery period by performing an arithmetic operation using, among the required quantities contained in the new sets of forecast information, those that correspond to the valid forecast lead times, and the conversion coefficients corresponding thereto;**

page 228 column 2, it is seen that Bitran calculates an optimization model which includes inventory holding cost in addition to the forecast for each product family (page

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229 column 1, Bitran discusses using the forecast to calculate the production and inventory amounts, since they are attempting to schedule production to minimize costs, where those costs includes the production and inventory holding of items in various periods. Since Bitran discusses the costs of holding inventory as part of producing a forecast and then balancing shortage costs with the costs of holding inventory, Bitran calculates a forecast and then associates a margin with its associated costs to determine what the safety stock quantities should be. However, Bitran is not only performing a safety stock calculation but is trying to balance a variety of costs (and the associated product quantities) in order to minimize inventory holding costs balanced against losing revenue on stockouts because of variation in the forecast.

Furthermore, Bitran does not teach using a computer with storage and a processor to store the data and perform the calculations, however, Official Notice is taken that this is old and well known in the art and would have provided a predictable result in combination with the teachings of Bitran in automating the model teachings by using a computer with a processor and memory with the well known advantage of the method steps being performed faster and more efficient since they are done with a computer.

Regarding **Claim 2**, Bitran teaches:

**[2] The order forecast system as claimed in claim 1, wherein the forecast quantity of orders is calculated by multiplying a required quantity contained in**

**the new forecast information by an average value of a plurality of corresponding conversion coefficients.**

Page 227 column 1 bottom – the assumption and inclusion into the model that forecast error is normally distributed means they are taking an average value

Regarding **Claim 3**, Bitran teaches:

**[3] The order forecast system as claimed in claim 1, wherein the conversion coefficients are calculated as a ratio of two or more required quantities among the required quantities contained in the past forecast information whose forecast lead times are consecutive to two or more corresponding actual order quantities.**

Page 227 column 1 last paragraph, Bitran teaches that the forecast accuracy (i.e. conversion coefficient) is a ratio of actual to forecast quantity demand for a given product whose lead times are measured consecutively in the planning horizon. Bitran notes that this conversion coefficient improves in accuracy over time from the beginning of the planning horizon to the end.

Regarding **Claim 4**, Bitran teaches:

**[4] The order forecast system as claimed in claim 2, wherein the conversion coefficients are calculated as a ratio of two or more required quantities among the required quantities contained in the past forecast information whose forecast lead times are consecutive to two or more corresponding actual order quantities.**

Page 227 column 1 last paragraph, Bitran teaches that the forecast accuracy (i.e. conversion coefficient) is a ratio of actual to forecast quantity demand for a given product whose lead times are measured consecutively in the planning horizon. Bitran notes that this conversion coefficient improves in accuracy over time from the beginning of the planning horizon to the end

Regarding **Claim 5**, Bitran teaches:

**[5] The order forecast system as claimed in claim 3, wherein the conversion coefficient is treated as the conversion coefficient corresponding to the forecast lead time among the two or more consecutive forecast lead times whose period is shortest.**

As per claim 3 above, Bitran notes that the forecast accuracy, or conversion coefficient (i.e. the ratio between actual and forecast demand) improves as one moves through the planning horizon. In Bitran's model, the conversion coefficient of the last period in the planning horizon would provide a conversion coefficient corresponding to lead time whose period is shortest, i.e. the shortest time left in the planning horizon.

Regarding **Claim 6**, Bitran teaches:

**[6] The order forecast system as claimed in claim 4, wherein the conversion coefficient is treated as the conversion coefficient corresponding to the forecast lead time among the two or more consecutive forecast lead times whose period is shortest.**

As per claim 4 above, Bitran notes that the forecast accuracy, or conversion coefficient (i.e. the ratio between actual and forecast demand) improves as one moves through the planning horizon. In Bitran's model, the conversion coefficient of the last period in the planning horizon would provide a conversion coefficient corresponding to lead time whose period is shortest, i.e. the shortest time left in the planning horizon.

Regarding **Claim 7**, Bitran teaches:

**[7] The order forecast system as claimed in claim 1, wherein a forecast lead time whose ratio of standard deviation to an average value of a plurality of conversion coefficients corresponding thereto does not exceed a predetermined threshold is judged to be a valid forecast lead time.**

page 226 column 2, Bitran teaches that forecast accuracy (i.e. a conversion coefficient) varies over time and by product. On page 227 column 1, last para Bitran teaches that an assumption (i.e. a judgment) is made that forecast error is assumed be constant and decreasing over time (from the earlier discussion, this means that the std deviation of the forecast error for different products (i.e. and their associated lead times) is determined to be decreasing over time, that is, does not exceed a predetermined threshold.

Regarding **Claim 8**, Bitran teaches:

**[8] The order forecast system as claimed in claim 2, wherein a forecast lead time whose ratio of standard deviation to an average value of a plurality of conversion coefficients corresponding thereto does not exceed a predetermined threshold is judged to be a valid forecast lead time.**

page 226 column 2, Bitran teaches that forecast accuracy (i.e. a conversion coefficient) varies over time and by product. On page 227 column 1, last para Bitran teaches that an assumption (i.e. a judgment) is made that forecast error is assumed be constant and decreasing over time (from the earlier discussion, this means that the std deviation of the forecast error for different products (i.e. and their associated lead times) is determined to be decreasing over time, that is, does not exceed a predetermined threshold.

Regarding **Claim 9**, Bitran teaches:

**[9] The order forecast system as claimed in claim 3, wherein a forecast lead time whose ratio of standard deviation to an average value of a plurality of conversion coefficients corresponding thereto does not exceed a predetermined threshold is judged to be a valid forecast lead time.**

page 226 column 2, Bitran teaches that forecast accuracy (i.e. a conversion coefficient) varies over time and by product. On page 227 column 1, last para Bitran teaches that an assumption (i.e. a judgment) is made that forecast error is assumed be constant and decreasing over time (from the earlier discussion, this means that the std

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deviation of the forecast error for different products (i.e. and their associated lead times) is determined to be decreasing over time, that is, does not exceed a predetermined threshold

Regarding **Claim 10**, Bitran teaches:

**[10] The order forecast system as claimed in claim 4, wherein a forecast lead time whose ratio of standard deviation to an average value of a plurality of conversion coefficients corresponding thereto does not exceed a predetermined threshold is judged to be a valid forecast lead time.**

page 226 column 2, Bitran teaches that forecast accuracy (i.e. a conversion coefficient) varies over time and by product. On page 227 column 1, last para Bitran teaches that an assumption (i.e. a judgment) is made that forecast error is assumed be constant and decreasing over time (from the earlier discussion, this means that the std deviation of the forecast error for different products (i.e. and their associated lead times) is determined to be decreasing over time, that is, does not exceed a predetermined threshold

Regarding **Claim 11**, Bitran teaches:

**[11] The order forecast system as claimed in claim 5, wherein a forecast lead time whose ratio of standard deviation to an average value of a plurality of**

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**conversion coefficients corresponding thereto does not exceed a predetermined threshold is judged to be a valid forecast lead time.**

page 226 column 2, Bitran teaches that forecast accuracy (i.e. a conversion coefficient) varies over time and by product. On page 227 column 1, last para Bitran teaches that an assumption (i.e. a judgment) is made that forecast error is assumed be constant and decreasing over time (from the earlier discussion, this means that the std deviation of the forecast error for different products (i.e. and their associated lead times) is determined to be decreasing over time, that is, does not exceed a predetermined threshold

Regarding **Claim 12**, Bitran teaches:

**[12] The order forecast system as claimed in claim 6, wherein a forecast lead time whose ratio of standard deviation to an average value of a plurality of conversion coefficients corresponding thereto does not exceed a predetermined threshold is judged to be a valid forecast lead time.**

page 226 column 2, Bitran teaches that forecast accuracy (i.e. a conversion coefficient) varies over time and by product. On page 227 column 1, last para Bitran teaches that an assumption (i.e. a judgment) is made that forecast error is assumed be constant and decreasing over time (from the earlier discussion, this means that the std deviation of the forecast error for different products (i.e. and their associated lead times) is determined to be decreasing over time, that is, does not exceed a predetermined threshold

**Claims 13 and 14** recited similar limitations to those addressed by the rejection of **Claims 1-12** above, and are therefore rejected under the same rationale.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6401070 by McManus discloses a method for improving forecasts by removing bias.

US 6205431 by Willemain teaches system for forecasting intermittent demand

US 5963919 by Brinkley teaches a method for strategic inventory management

The effect of parameter uncertainty on forecast variances and confidence intervals...

M Sampson - Journal of Applied Econometrics, 1991 - jstor.org

In Search of One-Number Forecasting, 2003

K Peterson, L Geishecker, BL Eisenfeld - Gartner Research Mote - bus.umich.edu

Forecast Evaluation

Joel S. Demski and Gerald A. Feltham

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The Accounting Review, Vol. 47, No. 3 (Jul., 1972), pp. 533-548

Hierarchical integration of production planning and scheduling- ► [mit.edu](#) [PDF]

AC Hax, HC Meal - 1973 - [dspace.mit.edu](#)

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GR Bitran, D Tirupati - 1989 - [dspace.mit.edu](#)

Data mining on time series: an illustration using fast-food restaurant franchise data-

► [scausa.com](#) [PDF]

LM Liu, S Bhattacharyya, SL Sclove, R Chen, ... - Computational Statistics and Data Analysis, 2001 – Elsevier

Reducing the Cost of Demand Uncertainty through Accurate Response to Early Sales

Marshall Fisher and Ananth Raman

Operations Research, Vol. 44, No. 1, Special Issue on New Directions in Operations Management (Jan....

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MZ Meybodi, BL Foote - Annals of Operations Research, 1995 – Springer

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M Johnson - 1999 Annual Conference Proceedings of the Council of ..., 1999 - vics.org

The economic production quantity (EPQ) with shortage derived algebraically

LE Cárdenas-Barrón - International Journal of Production Economics, 2001 - Elsevier

“Using the deterministic EOQ formula in stochastic inventory control”, S Axsäter -

Management Science, 1996 - jstor.org

Determining safety stock in the presence of stochastic lead time and demand jstor.org

[PDF]

GD Eppen, RK Martin - Management Science, 1988 - jstor.org

Forecasting demand variation when there are stockouts jstor.org [PDF]

PC Bell - The Journal of the Operational Research Society, 2000 - jstor.org

MRP performance effects due to forecast bias and demand uncertainty

ST Enns - European Journal of Operational Research, 2002 – Elsevier

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Economic and statistical measures of forecast accuracy [econ.cam.ac.uk](http://econ.cam.ac.uk) [PDF]

CWJ Granger, MH Pesaran - Journal of Forecasting, 2000 - [econ.cam.ac.uk](http://econ.cam.ac.uk)

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Sterrett whose telephone number is 571-272-6881. The examiner can normally be reached on 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on 571-272-6737. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JGS 12-22-09

/Jonathan G. Sterrett/

Primary Examiner, Art Unit 3623

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